

What is claimed is:-

1. A method for the construction of an arrangement of long-distance wells for the production, transport, and exploitation of mineral layers present in a reservoir of a geological formation, said method comprising:

drilling a first well of medium distance;

then drilling at least one multilateral well, formed of two separated drilling sections, each of medium length, said multilateral well 2 connected hydraulically to the medium-distance well by means of drilling sections, so as to form a long-distance well by the hydraulic connection of the end of one of said drilling sections of the multilateral well to the end of a drilling section of the medium-distance well, so obtaining a long-distance well which allows for the drainage of the reservoir in deep water and extremely deep water from a platform in shallower water.

2. A method according to claim 1, wherein said wells are drilled on the basis of indications from geological studies.

3. A method according to claim 1, wherein said two separated drilling sections of said multilateral well run in opposite directions.

4. A method according to Claim 1, wherein the mineral layers comprise fluids in the gaseous, liquid, or solid state, in isolation or in a mixture of any proportion.

5. A method according to Claim 4, wherein the fluids produced comprise petroleum and gas.

6. A method according to Claim 1, wherein that the operations of completion and casing are dispensed with for the multilateral wells.

7. A method according to Claim 1, wherein the initial well is a directional well.
8. A method according to Claim 1, wherein the initial well is a multi-directional well.
9. A method according to Claim 1, wherein the initial well is a vertical well.
10. A method according to Claim 1, wherein the well is connected to a production unit platform by means of a rigid production pipe located inside a riser or flexible line of short length, the well being the production well.
11. A method according to Claim 1, wherein the final distance obtained is the result of the sum of the distances of the two drilling sections of the multilateral well and the drilling section of the medium-distance well, corresponding to a total distance of approximately three times the distance of each drilling section of medium distance.
12. A method according to Claim 1, wherein the distance of said medium-distance well is increased by more than three times by the drilling of one or more wells in a series which are each connected hydraulically to the medium-distance well, in such a way as to increase the total distance, only the medium-distance well being connected to a production unit, while the other wells have their heads closed off.
13. A method according to Claim 1, wherein there are drilled a plurality of multilateral wells, of medium distance, each provided with two drilling sections in opposite directions, the hydraulic connection of multiple drilling sections being

carried out in such a way as to conduct the fluids draining from the reservoir as far as a production unit on the surface, connected to said first well.

14. A method according to Claim 1, wherein there are drilled a plurality of multilateral wells of medium length, at least one of which is provided with a first drilling section and two more drilling sections of oblique orientation, the hydraulic connection of the multiple drilling sections of said first well to the drilling sections of the multilateral wells being carried out in such a way as to conduct the fluids drained from the reservoir as far as a production unit on the surface.

15. A method according to Claim 1, wherein there are drilled a plurality of multilateral wells of medium length, each provided with three drilling sections, two being in opposite directions, and one further drilling section of orthogonal orientation in respect of the other two, wherein drainage as far as a production unit is effected by the hydraulic connection of the multiple drilling sections of said first well to the drilling sections of the multilateral wells, in such a way as to conduct the fluids drained from the reservoir as far as the production unit on the surface.

16. A method according to Claim 1, wherein, for the transport of the fluids produced, two wells of medium length hydraulically connect two operational units in the manner of a conventional pipe for the transport of liquids and/or gases.

17. A method according to Claim 16, wherein, for the transport of the fluids produced, the underground reservoir is initially penetrated by the first well, then penetrated by the multilateral well, the end of the drilling section of said first well is connected to the end of the drilling section of said multilateral well, thereby forming one long-distance well, the end of the drilling section of the multilateral

well is hydraulically connected to the end of the drilling section of said first well and to the production unit.

18. A method according to Claim 1, wherein the fluids produced from the production layers are recovered with the aid of a drainage network.

19. A method according to Claim 18, wherein the drainage network is formed by an arrangement of multilateral wells drilled in series and in an arrangement such as will allow for the optimization of the drainage of the whole fluids production area of the mineral layer, the difference between the pressures of the various different wells determining that the flow of the fluids will be in the direction from the wells of greater pressure to the first well of lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

20. A method according to Claim 18, wherein the drainage network is formed by an arrangement of multilateral wells drilled in parallel and in an arrangement such as will allow for the optimization of the drainage of the whole fluids production area of the mineral layer, the difference between the pressures of the various different wells determining that the flow of the fluids produced will be in the direction from the wells of greater pressure to the first well of lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

21. A method according to Claim 18, wherein the drainage network is formed by an arrangement of wells, drilled with the wells intersecting one another, the difference between the pressures of the various different wells determining that the flow of the fluids produced will be in the direction from the wells of greater

pressure to the first well of lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

22. A method according to Claims 21, wherein the arrangement of wells of the drainage network comprises vertical, directional, and multilateral wells.

23. An arrangement of long-distance wells for the production and transport of fluids, and exploitation of mineral layers present in a geological formation, comprising an initial drilled well and at least one other multilateral well, forming a network of underground channels from which the flow of fluids takes place in the direction from the wells of greater pressure to the well of lesser pressure.

24. An arrangement in accordance with Claim 23, comprising a first well of medium distance and at least one multilateral well provided with two drilling sections in opposite directions and of medium distance, said multilateral well being connected hydraulically to the well of medium distance by means of a first drilling section, forming a well of long distance by the hydraulic connection of the second drilling section of said multilateral well to the end of said first well and to a production unit.

25. An arrangement in accordance with Claim 23, wherein long distances are obtained by one or more wells in series, which are also connected hydraulically to the initial well, said initial well being the only one connected to the production unit, while the other wells have their heads closed off.

26. An arrangement in accordance with Claim 23, which allows for the drainage of the multilateral wells of medium length, each provided with two drilling sections in opposite directions, as far as a production unit, by the hydraulic connection of multiple drilling sections of the initial well with the drilling

sections of the multilateral wells in such a way as to conduct the fluids drained from the reservoir as far as a production unit on the surface.

27. An arrangement in accordance with Claim 27, which allows for the drainage of the multilateral wells of medium length, each provided with three drilling sections, two of these drilling sections being of oblique orientation in relation to the other drilling sections as far as a production unit, by the hydraulic connection of multiple drilling sections of the initial well with the drilling sections of the multilateral wells in such a way as to conduct the fluids drained from the reservoir as far as a production unit on the surface.

28. An arrangement in accordance with Claim 23, which allows for the drainage of the multilateral wells of medium length, each provided with three drilling sections, being in opposite directions respectively, two of said drilling sections being of orthogonal orientation in respect to the third drilling section, as far as a production unit, by the hydraulic connection of multiple drilling sections of the initial well with the drilling sections of the multilateral wells in such a way as to conduct the fluids drained from the reservoir as far as a production unit on the surface.

29. An arrangement in accordance with Claim 23, which forms a drainage network for the flow of the fluids produced from the formation.

30. An arrangement in accordance with Claim 29, wherein the drainage network is formed by an arrangement of multilateral wells drilled in series, and in an arrangement such as will allow for the optimization of the drainage of the whole fluids production area of the mineral layer, the difference between the pressures of the various different wells determining that the flow of the fluids produced will be in the direction from the wells of greater pressure to the well of

lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

31. An arrangement in accordance with Claim 29, wherein the drainage network is formed by an arrangement of wells drilled in parallel in relation to the multilateral wells and an arrangement such as will allow for the optimization of the drainage of the whole fluids production area of the mineral layer, the difference between the pressures of the various different wells determining that the flow of the fluids produced will be in the direction from the wells of greater pressure to the well of lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

32. An arrangement in accordance with Claim 29, wherein the drainage network is formed by an arrangement of wells drilled with the wells intersecting one another, the difference between the pressures of the various different wells determining that the flow of the fluids produced will be in the direction from the wells of greater pressure to the well of lesser pressure, which will become the production well for the layer, the other wells having their heads closed off.

33. An arrangement in accordance with Claim 32, wherein the arrangement of wells in the drainage network comprises vertical, directional, and multilateral wells.

34. An arrangement in accordance with Claim 23, wherein the long-distance wells do away with the need for fracturing the reservoir in order to obtain the fluids produced.

35. A method for the construction of a network of pipes for the transport and storage of fluids produced from mineral layers present in an underground reservoir said method comprising:

drilling one single pipe into the underground reservoir;

using two wells of medium distance which are hydraulically connected, said wells being connected to two operational units in the manner of a conventional pipe for the transport of liquids and/or gases.

36. Method for the construction of a network of pipes in accordance with Claim 35, wherein storage is carried out in a network of pipes constructed in accordance with an arrangement of multilateral wells drilled in series, said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.

37. A method for the construction of a network of pipes in accordance with Claim 35, wherein storage is carried out in a network of pipes constructed in accordance with an arrangement of multilateral wells drilled in parallel, said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.

38. A method in accordance with Claim 35, wherein storage is carried out in a network of pipes constructed in accordance with an arrangement of wells drilled with intersection of the wells with one another, said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.



39. A method in accordance with Claim 38, wherein the arrangement of wells constructed in the network of pipes for storage comprises vertical, directional, and multilateral wells.

40. An arrangement in accordance with Claim 23, wherein a storage network is formed for the fluids produced from the formation.

41. An arrangement in accordance with Claim 40, wherein the storage network is formed by an arrangement of multilateral wells drilled in series said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.

42. An arrangement in accordance with Claim 40, wherein the storage network is formed by an arrangement of multilateral wells drilled in parallel, said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.

43. An arrangement in accordance with Claim 40, wherein the storage network is formed by an arrangement of wells drilled with intersection of the wells with one another, said network being connected hydraulically by means of at least two wells of medium distance to at least two operational units, the other wells having their heads closed off.

44. An arrangement in accordance with Claim 43, wherein the arrangement of wells in the storage network comprises vertical, directional, and multilateral wells.